DAIRY FACTS

INFECTION CAUSE OF GARGET

Germs Gain Entrance Through Teat Duct—Bacteria Do Little Harm—Observations to Note.

(By I. E. NEWSOM, Colorado Agricultural College, Fort Collins, Colo.)

At one time it was thought that garget was due to mechanical injury to the udder, and while this cause cannot be entirely eliminated, it seems evident from all recent work that practically all cases are due to infection, the germs gaining entrance through the teat duct.

It is well known that sterile milk is not to be had even when removed under the most rigid precautions. This indicates that germs are to be found in the udder most of the time. Under ordinary circumstances these bacteria do little harm, but occasionally a harmful one gets in and sets up severe inflammation. This is especially likely

High-Producing Dairy Cow.

to be the case at about the time of freshening, or during the time the cow is drying up. At both periods there is an accumulation of milk that is not drawn out regularly and consequently it forms a good medium in which bacteria can live. When there is much accumulation of milk, milking should be done in order to get out these foreign organisms before they become harmful. While it is not necessary at the time of drying up to encourage milk production by milking dry, yet it is much better to milk out a small quantity so as to get all of the organisms out of the sinus, than it is to allow it to accumulate for several days.

DOUCHE IS OFTEN NECESSARY

Plan Outlined for Treating Cows for Sterility and Abortion—Good Solution in Use.

Frequently the dairyman finds it necessary to use a vaginal douche as a treatment for abortion and sterility troubles. The following method is recommended for such cases:

Secure a large galvanized pail, four to six gallons in capacity according to the size of the herd, and fit it with a stop-cock. Buy a pure gum horse stomach tube and fit it to the stop-cock. Elevate the pail until it is about three feet above the cow so that the liquid will flow freely. This can be readily done by making use of the feeding and litter track if there is one in the barn. When ready to use the apparatus, insert the stomach tube into the vagina, open the stopcock and allow the douching solution to flow into it by gravity until it is completely filled. A very good solution to use is a 1 to 2,500 or 3,000 parts of permanganate of potash and water.

SEPARATING A THICK CREAM

Skimming High-Test Product Leaves More Skim Milk on Farm for Hogs, Calves and Fowls.

Farmers will make more money by separating a reasonably thick cream than a thin cream. Skimming high-test cream leaves more skim milk on the farm to feed to the hogs, calves and chickens. Skim milk utilized in this way has a feeding value of about 35 cents per hundred, while if the milk is left in the cream, nothing is realized.

The butter maker usually wants a cream testing around 35 or 44 per cent butterfat. In the winter, if the cream is above 40 per cent it is rather difficult to get the cream all out of one can into another or into a vat. Cream testing about 35 per cent in the winter and 40 per cent in the summer is right for buttermaking.

COWS ARE DAIRY MACHINES

If They Fail to Produce Profits Something Is Wrong—Usually It Is Raw Material.

The cows on the dairy farm represent the equipment that produces a profit. If they fail something must be wrong. They are the machines. The feed is the raw material, the milk or butterfat is the finished product.

If the machines are efficient and the finished product is not all that can be desired, the trouble must be with the raw material.

EVERY DEPARTMENT OF FARM MUST BE WELL ORGANIZED FOR SUCCESS

New Yorker Works Out Profitable Solution of Farm Problems in His Region—Started Enterprise Without Previous Experience to Aid Him—Always Weighed Advice Carefully and Measured It on Basis of His Own Conditions.

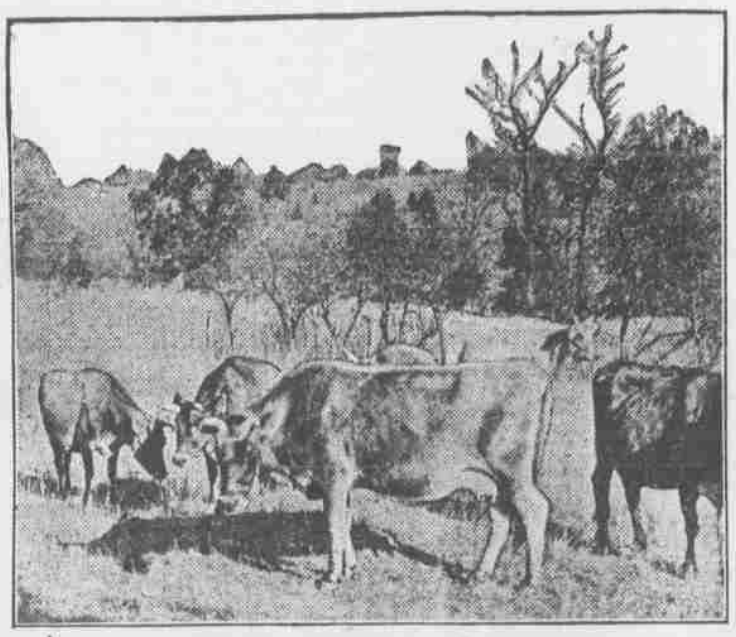
(By G. H. ALFORD, State Demonstration Agent, Maryland.)

The purpose of this article is to emphasize the following facts: It is not enough to raise good crops or to secure large animal production; these must be economically secured. This is only accomplished when capital and labor are so adjusted to existing conditions that maximum yields are obtained at the lowest cost. To farm successfully every department must be well organized and must be coordinated with the others. Labor must be fully employed, capital must be well utilized, both quantity and quality of products must be secured, and the products must be well marketed. All these things come as the result of close attention to and a detailed knowlege of the business.

The reasons and at the same time the justification for recounting the experiences and the methods of any individual farmer, however successful he may be, lies in the fact that a definite illustration brings out the underlying principles most clearly and effectively. To most practical men the concrete appeals more strongly than the abstract. Especially is this true in the teaching of better farm management, because it is a comparatively new method of attacking farm problems which is not yet clearly defined. It is because Mr. L. J. English of Binghamton, N. Y., has worked out a profitable solution of farm problems in his region that his success is worthy of telling and of reading.

Had No Experience.

Mr. English purchased the farm in 1897. He had no previous farm experience to aid him in starting the enterprise. His new possession consisted of 162 acres of land, "more or less," with good buildings and all the stock,



Cows Make the Farm More Profitable.

machinery and other equipment then on the farm. The stock consisted of three horses, 50 cows, 12 head of cattle and a few chickens. The ordinary equipment was left on the place, together with some hay, grain and roughage. About 90 acres of the farm lie in the broad, level valley, the remainder being on a slope too steep for cultivation, and on the top of a hill nearly 500 feet above the valley. About 30 acres of quite level and easily tillable land are on the hilltop, but it is difficult of access. For this entire property $16,000 was paid—$8,000 in cash and $8,000 as a mortgage. The land and buildings were valued at $12,000 and the stock and other movable equipment at $4,000.

The former owner had been in possession of the farm for 67 years. It had been profitable 30 or 40 years before, and had been recognized as a farm of considerable fertility. In the years immediately preceding its purchase by Mr. English, it had not paid expenses, to say nothing of the interest on the investment, and the

Youngsters Like These Soon Grow Into Profitable Cows.

neighborhood generally prophesied that the former owner would get the farm back on the mortgage in a few years. It was even said that there was a deliberate purpose in selling to one who had so little farm experience.

Had Little Capital.

As can readily be imagined, Mr. English found himself in a rather difficult position when he took possession of the farm. He was practically without farming experience and had very little working capital. He had a rugged constitution, however, and had been brought up on hard work, so that he was not afraid of it. To the college and the agricultural press, and especially to the personal help and interest of one college professor, he ascribes all the success he has ever made. These forces stirred him to study his business and to use in every way possible the agencies at hand which would help him and which would aid him in obtaining a better knowledge of the principles of farming. He had observed that rapid progress was being made in every line of industry but agriculture, and he took a new interest in everything pertaining to better farming. Yet he never made the mistake of taking advice wholesale. It was always weighed carefully and measured in the light of his own conditions.

When Mr. English took stock of his resources he found that his income was practically confined to one source—dairying. Some cows were making a good profit; others were causing a daily loss. The fertility of the soil was maintained by the use of manure alone, and this went to produce feed crops for the cattle. Very little hay was sold. There was no systematic plan of crop production or rotation or definite method of soil improvement.

System Had Faults.

Such a system had several faults, the correction of which was early recognized as essential to success. Unprofitable cows were destroying the profit of the better ones. The limitation of the income to practically one source put upon that factor the entire burden of the farm expenses. Labor was poorly distributed and was of necessity frequently employed on unproductive enterprises in order to hold it for the dairy work, and this was unsatisfactory both to employer and men. No definite system of crop production was in use to provide the right proportion of each crop with the proper distribution of labor. The maintenance of fertility was expensive. All these things it was determined to remedy.

The first step to be taken was the improvement of the dairy. The performance of each cow was studied and the unprofitable ones disposed of. The next important step was to increase the sources of income by growing such other crops as the labor necessary for the dairy could handle without extra expense, or, in other words, to diversify the farming. The third, but by no means the least important step, was to be the development of a rotation that would improve the soil, furnish the maximum feed for the stock and provide a cash crop. These were taken up and carried out as rapidly as possible.

A herd of 50 fairly good cows was purchased with the farm, and at the start dairy products were about the only source of income. Gradually this has been changed, and at present, even though the dairy is an important part of the farm, attention is given to several lines. A purebred sire was included in the farm purchase. It has been the policy at all times to keep a purebred sire of good quality in the herd. The heifer calves from the best producing cows were grown and tested out for dairy production, the best being kept and the others discarded. In this way the quality and the producing power of the cows have been constantly increased. The herd today is uniform and able to produce results. Several cows have produced 60 pounds or more of milk a day and have maintained this record for continuous periods of from four to six months.

Limiting Factors.

Mr. English found that with this method the cows were the limiting factors in the profit. No matter how large the crop or what it was worth in the market, its value was measured entirely by what the cow could make out of it. If the price of the milk was low, so was the price of the crop. If the cow was a poor one, the price of the crop was still lower. Moreover, there was much time on this farm when the labor was not fully and profitably employed. The distribution of labor was so poor that the men could not be given steady employment by the year, and some difficulty was experienced in getting satisfactory labor. So this farmer wanted to add to his income without cutting down the income from milk, and by this means to secure a better distribution of labor.

Sugar beets were first tried, as a factory was then in operation at Binghamton. It was found that an average of from 10 to 20 tons of beets could be raised per acre, which brought $5 per ton. An average income of at least $75 per acre could thus be obtained, besides saving as many tops as there were beets sold. These were of considerable value as a succulent feed for the cows.

Potatoes Were Next.

The next crop tried was potatoes, and it proved to be so good a money-

Man's Greatest Benefactor—the Cow. She Pays Debts and Saves Home.

maker that it is now an annual crop. Irish Cobbler was the variety grown, and with good culture 300 to 350 bushels per acre were produced annually. As many as 5,000 bushels of potatoes are often grown on this farm in one season. The growing of these crops led to some direct sales in the city, and until the last year or two a small but profitable direct market-garden business was carried on. Potatoes and apples are still sold direct in the city.

The large cash sales from these crops as compared with grain and hay, early taught Mr. English the lesson which so many farmers are now learning to their advantage, namely, that it is cheaper to buy grain than to raise it when the land upon which grain is grown will yield much more—often double—the cash value of the grain in other crops. It is a simple economic proposition to decide which is cheapest—home-grown or purchased grain. Mr. English figured that he could raise enough sweet corn, potatoes, onions, or other similar crops to buy the grain which would have grown upon his land and still have a good margin left for profit.

Mr. English is an ardent advocate of the use of clover, both as a forage plant and as a soil improver. It is the key to success in his system of farming. His average crop of clover is about three tons per acre, and several times he has cut five tons per acre in two cuttings. Not only does it yield practically as well as alfalfa under his conditions, but it is regarded as equally valuable as a feed for cattle. For such he insists that the clover must be cut earlier than is the custom. He aims to cut it before much bloom appears. Despite the lower analysis of clover in digestible protein, his practical experience shows that it is as good a milk producer as alfalfa.

In addition to the grain ration mentioned, the cows on the farm receive a good feed of silage and all the clover hay they can consume.

Noteworthy Farming.

This facility of adapting his farming to the conditions of the season and the markets is one of the things which makes the farming of Mr. English so noteworthy.

In this rotation as now practiced, commercial fertilizer is used on potatoes only. From 500 to 600 pounds of a fertilizer containing 4 per cent of nitrogen, 6 per cent of phosphoric acid, and 10 per cent potash is almost always used, being applied with a potato planter. Tests have shown that fertilizers with corn were unprofitable under the conditions of this farm, but that manure gave very satisfactory results. Of all the land to be seeded to clover, 400 to 600 pounds of hydrated lime (this form is used because it is easiest to apply, though its first cost is higher than other forms) is applied once in three years. In all these applications no fixed rule is invariably followed, but the needs of the crops and the season are always considered. A definite system followed as closely as good judgment will permit is the very best kind of farming.

The results of 15 years' work along these lines has been the development of one of the most successful systems of farm management in the whole region.

Every cow in the dairy is now a profitable one. All the "boarders" have been dropped. Without materially increasing the expenses of the farm, the income has been practically doubled by supplemented receipts from the dairy and by cash crops for the city markets, especially potatoes.

While the income from the dairy has been increased, the expenses have been reduced by growing a larger part of the rations on the farm. Succulent feeds and feeds high in protein have made this possible, especially corn for silage and clover hay.

FARM POULTRY

HINTS FOR TURKEY RAISERS

One of Greatest Difficulties in Successfully Handling Fowls Is Lack of Hardiness.

(By A. BASS, Minnesota Experiment Station.)

Lack of vitality and hardiness in the stock is one of the greatest difficulties in successfully handling turkeys. Bronze turkeys are the largest and hardiest of all domestic varieties.

Here are some pointers for turkey raisers:

1. Lice cause great loss in turkeys. Kill them on the hens and on the young turkeys with insect powder, applying once a week when cooped up.

2. Turkeys do best when kept separate from chickens. If the two are kept together the turkeys are likely to take chicken diseases.

3. The growth of turkeys is rapid. Give plenty of nutritious and easily digested food. For the first five days feed four quarts of bread crumbs and one part of boiled eggs. Feed one meal a day of rolled oats and give all the sour milk they will drink. Change gradually, and in three weeks feed six parts of wheat and two parts of corn, with rolled oats once a day. From the time the birds are ten weeks old until maturity give: Wheat, ten parts;

Healthy and Active Type.

whole oats, two parts, increasing to ten parts in two weeks; cracked corn, ten parts.

4. Access to fine gravel, crushed shells and broken charcoal is necessary.

5. Give plenty of green food. It prevents digestive troubles.

6. Black or red pepper and ginger in food or drinking water aids in overcoming chills and prevents bowel trouble, especially on cold, damp days. Plenty of grit and oyster shells, together with well-selected, wholesome food, eliminates this necessity in most cases.

7. If young turkeys get wet, take them to a warm room until thoroughly warm and dry.

8. The more exercise the better. Always give free range in dry weather if possible.

9. Dampness, lice and filth are deadly foes to young turkeys.

TIME TO SELL THE BROILERS

Surplus Cockerels of Quickly Maturing Breeds May Be Marketed to Good Advantage.

(By A. C. SMITH, Minnesota Experiment Station.)

Surplus cockerels, particularly those of the higher and more quickly maturing breeds, may be marketed now to advantage. Poultry raisers, particularly those not largely engaged in the occupation, market their surplus cockerels sooner or later. All realize that cockerels of the lighter breeds become a nuisance very early in life and for that reason it is very desirable to get rid of such at the broiler age. This is comparatively easy to do, as broilers are used at all seasons in the larger cities. So active, in fact, is the demand for chicks under two pounds that often a price of at least two cents a pound above other quotations is offered for them.

While chicks of the broiler size are always salable, it must be borne in mind that they will not always bring the same prices, and that the present is the time of high prices, which—at the top about July 1—drop soon afterwards, and with accelerated rapidity at the season advances.

BEST FEED FOR YOUNG BIRDS

Ducklings and Goslings Should Be Given Mashes Mixed Crumbly, but Not Too Wet.

Don't try to raise ducklings and goslings on dry feed, but give them mashes mixed crumbly, but not wet. A good mash for those more than a week old is one part cornmeal and two parts wheat bran, mixed with milk or water and containing a little grit and a little finely granulated charcoal.

HORSES PIGS and CATTLE

OUTBREAKS OF HOG CHOLERA

Increase Noted During Latter Part of August or Early in September—Feed Corn Sparingly.

It has been observed that an increase in the number of outbreaks of hog cholera occurs during the latter part of August or the first part of September, and that the outbreaks increase in numbers and violence until the latter part of October or November, when the disease gradually de-

Properly Fed on Balanced Ration.

clines, writes H. K. Wright in National Stockman and Farmer.

The occurrence of cholera is dependent solely upon the hogs becoming infected with the specific cholera micro-organism. Practically all hogs are susceptible to the disease when fed balanced rations, but when improperly fed and allowed to become infested with parasites the chance of controlling cholera on exposure is greatly lessened. At this time new corn is beginning to be fed and care must be exercised or indigestion will result, thus lessening the vitality of the animals, and if exposed to cholera infection death should follow. New corn should be fed sparingly at first and the amount gradually increased. Never start by feeding it exclusively.

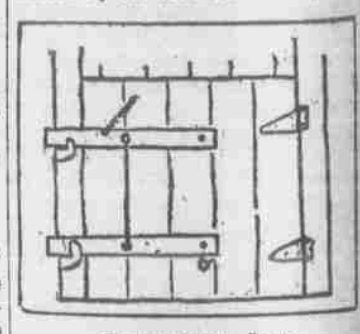
Should an outbreak of cholera occur, immediately isolate and quarantine the sick hogs. Notify your neighbors so that they may stay away from your hog lots and thus prevent spread of the infection. Get antihog cholera serum and inoculate all healthy hogs. Kill the sick hogs and burn the carcasses. No treatment can be relied upon to save one visibly sick.

DEVICE FOR FASTENING DOOR

Impossible for Hogs to Escape by Pushing on Bottom—Chain Holds Latches in Place.

Here is a very handy device for fastening doors where hogs are kept. It is impossible for them to break out by pushing on the bottom of the door.

The latches are made of wood and are bolted to the door. They are connected by an iron rod with eyes in



For Hoghouse Door.

each end. This rod is bolted to each latch, so that when you raise the top latch it pulls the lower one up.

A small chain is stapled to the upper latch and to the door. This prevents the latches dropping when the door is unlatched.

TROUBLE WITH YOUNG LAMBS

Animals Should Be Trimmed in Morning When Air Is Cool—Tissues Then Are More Firm.

In castrating lambs, if the drawing out of the cord should cause a rupture, simply replace the intestines and tie a twine securely around the scrotum as near the abdomen as possible. Lambs should be trimmed in the morning when the air is cool, as they bleed less, and as the tissues are more firm and rupture is not liable to occur. Rupture in castrating lambs is usually due to one of two causes; either the lamb is too young and the tissues not yet firm, or the lamb has been overheated and the tissues rendered too lax to stand the strain of pulling the cord.

Lambs No Longer Heard.

The bleating of lambs upon the hillsides is no longer heard in many parts of the country where such sounds used to be familiar, and yet both the wool and the carcass of a sheep bring good prices.